Circular 985

MECHANICS OF FARM BUDGETING

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University of Illinois College of Agriculture Cooperative Extension Service

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Table references in this circular are to tables in the Farm Management Manual which is revised yearly. In order to make proper use of the circular, you should have a copy of the manual as well as copies of the forms whose use is illustrated in this circular. These materials may be obtained from the Department of Agricultural Economics at the University of Illinois or from your county extension adviser.

SUCCESSFUL FARMING is the result of the operator's ability to make and to execute decisions that affect the profitability of the farm business. Some of the decisions that must be made include:

- What enterprises should be included in the operation?
- What size of farm should be operated? How big should the enterprise be?
- How should the factors of production be acquired? Should the land be rented or purchased? How should the capital be acquired? Should the labor be hired or supplied by the farm family?
- How should the work be done? What type of machinery and equipment should be used?
- What technologies must be included in the operation? What seed and fertilizer should be used? What type of rations should be fed to livestock?

Many of the decisions farmers must make concern soils, crops, livestock, machinery, and buildings. The agronomist, the animal scientist, the agricultural engineer, the veterinarian, or the entomologist can assist the farmer with these technical questions.

In addition to making decisions on technology, the operator must decide on the organization of his business and the acquisition of resources.

To help farmers with these decisions, the Department of Agricultural Economics at the University of Illinois has developed some budgeting procedures and tools. These include instructions and forms for complete budgets, partial budgets, and selected financial records. This circular explains why farmers should use these forms and also provides examples of their correct use.

This circular was prepared by R. B. Schwart, Associate Professor of Agricultural Economics, and J. M. Holcomb, Professor of Farm Management and Finance.

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Cooperative Extension Work, University of Illinois, College of Agriculture, and U.S. Department of Agriculture, cooperating. JOHN B. CLAAR, *Director*. Acts approved by Congress May 8 and June 30, 1914.

INCOME POSSIBILITIES FOR YOUR FARM

A major problem confronting farmers is the selection of a farm organizational plan that will help them achieve their farm and family goals. The farm plan must include the crops to be grown and the acres of each crop, the kinds and numbers of livestock, the labor and capital requirements, and a summary of the expected long-time income.

The most effective procedure for determining the best farm plan is to first work through the present farm plan on the income possibilities form (Exhibits A, B, and C) and then to work through alternative plans until the plan that best fits the farm in question is found. Average management has been assumed in calculating incomes and returns in the sample forms. It is also assumed that a farmer can achieve the same levels of return on one farm as well as on another. No attempt is made in the sample estimates to determine the income, labor, or capital requirements for a particular year.

The farm used to illustrate the budget forms contains 432 acres (403 acres tillable land, 18 acres permanent pasture, and 11 acres farmstead, roads, and wasteland). The livestock program includes about 250 head of feeder cattle and 100 litters of hogs. The farm is operated under a 50-50 livestock-share lease.

Exhibit A: Form 1.— Land Use System

The **crop column** lists the types of crops being grown. If other crops are grown that are not presently listed, write in these crops on lines 6, 7, or 8. If an acreage is not cropped because of participation in government programs, write "diverted acres" on line 8. Mixed hay, line 9, includes land from which part or all of the forage is removed as hay, haylage, or grass silage. Rotation pasture, line 10, refers to forage crops that are pastured; no part of the crop is harvested as hay, haylage, or silage. Grass and legumes seeded, line 11, refers to land that is seeded during the planning year. This will generally include the wheat, oats, and diverted acreages seeded.

Column 1. — Enter total acres of each crop to be grown. If diverted acres are listed, include these acreages in column 1. Circle acreages listed for grass and legumes seeded if they include small grain land and diverted acres seeded. Circling the acreage indicates that it is accounted for in other crops and is not included in computing total tillable acres.

Column 2. — Labor (hours) per acre is the annual direct hours required to produce the crops listed. Table 4 of the Farm Management Manual indicates three levels of efficiency. For planning purposes, average efficiency is used for all inputs. On line 9, column 2, footnote (b), do not use any labor input if hay is fed on the farm. If hay is sold, select the appropriate labor figure from Table 4.

Column 3. — Compute the amount of labor by multiplying acres in column 1 by hours of labor per acre in column 2. Then add the amounts for each crop to obtain the total hours on line 15.

Column 4. — Crop costs per acre are taken from Table 3 of the manual. These figures are total direct costs for 100 bushels of corn, 33 bushels of soybeans, and other crops as listed. The direct crop costs are the costs that can be directly allocated to each crop. Power and machinery costs include depreciation, repairs, fuel, taxes, and insurance.

Column 5. — Crop costs are calculated by multiplying column 1 by column 4. If hay is sold from the farm, compute crop costs on line 9. Add all amounts and enter the total on line 15.

Column 6. — Operator's share of acres is the acres from which the operator gets the crop or the income. Exhibit A, line 1, column 1 shows 237 acres of corn; the figure entered in column 6 will be 50 percent of column 1, or 118.5 acres, since the farm is operated on a 50-50 livestock-share lease. If tenures differ in one operation, Form AE-3722 (revised) may be used to compute the operator's share of acres.

Column 7. — Yield per acre is the potential yield that can be achieved over a period of years for the type of soil on the farm being considered. Crop-yield guides for Illinois soil types are available. These guides list the potential yields for selected crops. Hay yields are expressed in terms of dry hay that could be harvested per acre if all hay were harvested. Yields per acre of rotation pasture may be estimated by using Table 1.

Column 8.— Operator's share of production is the production of each crop from the operator's share of acres. To obtain this figure, multiply column 6 by column 7.

Column 9. — Fertilizer cost per unit is cost of fertilizer nutrient removals per bushel or per ton (see Table 2). If hay is sold from the farm, a per-unit value must be entered on line 9.

Column 10. — The amount of fertilizer cost is the value given to the nutrients removed by the crops produced. It is calculated by multiplying column 8 by column 9 and adding the amounts on different lines to get the total fertilizer cost on line 15.

Column 11. — Hay equivalent per unit is used to convert all forages to hay equivalents in tons. Green

EXHIBIT A

FORM 1. — LAND USE SYSTEM PLAN NO.____

Crop	Total acres[a]	Labor (hours) Per acre	Labor (hours) Amount (1x2)	Crop costs Per acre	Crop costs Amount (1x4)	Operator's share of acres[a]	Yield per acre	Operator's share of prod. (6x7)	Fertilizer cost Per unit	Fertilizer cost Amount (8x9)	Hay equivalent Per unit	Hay equivalent Amount (8x11)	Price per unit	Value of operator's share (8x13)
Column No.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1. Corn	237	4.5	1,066	$22	$5,214	118.5	130 bu.	15,405 bu.	$.14	$2,157			$1.10	$16,945
2. Corn silage		4.5[d]		22[d]			T.	T.	.70		.3	T.	5.50[d]	
3. Soybeans		4.5		18			bu.	bu.	.16				2.40	
4. Wheat	15	2.0	30	11	165	7.5	50 bu.	375 bu.	.21	79			1.50	563
5. Oats	60	2.0	120	10	600	30	70 bu.	2,100 bu.	.11	231			.60	1,260
6.														
7.														
8.														
9. Mixed hay	91	[b]		[b]		45.5	4 T.	182 T.			1.0	182 T.	[b]	
10. Rotation pasture							T.[c]	T.			1.0	T.		
11. Grasses and legumes seeded	(75)			8	600		T.[c]	T.			1.0	T.		
12. Total tillable acres	403													
13. Permanent pasture	18					9	.8 T.[c]	7 T.			1.0	7 T.		
14. Farmstead, roads, waste	11													
15. Totals	432 A.		1,216 hr.		$6,579					$2,467		189 T.		$18,768
16. Adjustment to crop cost: i. Less landlord's expenses in crop costs ..... −$1109 ii. Under 180 acres, add $1.50 × ____ tillable acres .. +$____ Over 260 acres, subtract $1.00 × 143 tillable acres −$ 403 Total crop cost adjustment (i+ii)					$1512	17. Adjustment to fertilizer cost for livestock manure returned: $.07 × 23750 bu. corn equivalent fed (Form 2, line 13, col. 5) × 50% operator's share				$ 831				
18. Total adjusted crop costs (col. 5, line 15 + or − line 16)					$5067	Total adjusted fert. costs (line 15 − line 17)				$1636	Total costs (col. 5 + col. 10)			$ 6,703
19. Cash-crop income over direct costs (line 15 − line 18)														$12,065

[a] List each crop separately. On double-cropped land, circle acres of the second crop. Do not add these circled figures into the totals.
[b] Use these blanks only when hay is sold. When hay is fed on the farm, leave blank.
[c] Convert pasture to hay equivalent yields by using ⅓ hay yield or see Manual, Table 1.
[d] Labor, crop costs, and prices are only for the grain in the silage. Additional costs and returns for silage are accounted for in the livestock system.

chop or hay silage is expressed as dry hay in column 7, so no conversion factor is needed in column 11.

Column 12. — Hay equivalent amount is the quantity of each forage crop produced, computed by multiplying column 8 by column 11. Add all lines to obtain the total of all forage produced on the farm, whether fed or not.

Column 13. — Price per unit is the long-time value of the crops produced (see Table 15). The unit price for corn silage is the dollar value of the grain in a ton of silage. The remainder of the ton of corn silage is equivalent to 0.3 ton of dry hay, which was included in the hay equivalent column. If hay is sold from the farm, enter the difference between market price (Table 15) and harvest cost (Table 3), or $14 ($20.00 market price per ton less $6.00 harvest cost per ton). No value is given to hay unless it is sold off the farm.

Column 14. — Value of operator's share is the value of the total grain produced and the forage if it is sold off the farm. This figure is computed by multiplying column 8 by column 13. Add all values and enter the total on line 15.

The income over direct costs is for the operator's share of the income. On a share-lease arrangement, some of the crop costs are paid by the landlord. The crop expenses vary with size of farm, so adjustments are made for farm size below 180 acres and over 260 acres. Adjustments are also made in fertilizer costs for corn fed to livestock, since nutrients supplied by manure reduce the amount of fertilizer needed. Protein supplement fed to livestock is not considered.

Line 16. — Calculate adjustment in crop cost as follows:

i. Landlord's expenses in crop costs include the landlord's share of the seed costs, harvesting costs, and fuel costs if any contribution is made. The example includes landlord's share of seed cost only.

Corn: ½ × 237 acres × $6.70 ($3.20 seeds and plants + $3.50 sprays and other materials)	$ 793.95
Wheat: ½ × 15 × $3.50	26.25
Oats: ½ × 60 × $2.50	75.00
Grass and legumes: ½ × 75 × $5.70	213.75
Total landlord's share of seed and spray materials	$1,108.95

Enter this amount on line 16i (total rounded in example), and reduce crop costs by this amount.

ii. If total tillable acres on line 12 are less than 180, multiply by $1.50 and add the resulting total to the crop costs. If total tillable acres on line 12 are more than 260, multiply by $1.00 and reduce the crop costs by this amount, as shown in the example below.

403 acres × $1.00 = $403.

The adjustment in crop costs is $1,512 ($1,109 + $403).

Line 17. — To adjust the fertilizer cost for livestock manure returned, multiply 7 cents, the value of plant nutrients in the manure produced from feeding 1 bushel of corn, times the bushels of corn fed to livestock, times the operator's share of crops from land where manure is applied.

Line 18. — Total adjusted crop costs, column 5, plus total adjusted fertilizer cost, column 10, equal total costs, column 14.

Line 19. — To get cash-crop income over direct costs, subtract line 18 from line 15.

Exhibit B: Form 2.– Livestock System

The livestock enterprise column lists the six most important enterprises on Illinois farms. If an enterprise used on the farm to be budgeted is not listed, enter it on one of the blank lines.

Column 1. — Number of units refers to number of producing cows, number of litters of pigs, number of ewes, or number of head of feeder livestock. One unit refers to the number of animals listed in Table 8.

Column 2. — Hay equivalent per unit is the total forage (hay, silage, and pasture) consumed per unit, converted to dry hay equivalents. This figure is greater than the amount of hay and silage harvested (see Table 8).

Column 3. — Total hay equivalent is computed by multiplying column 1 by column 2. This figure is for the total number of livestock. If the farm is 50-50 livestock share, half of the total on line 13 is the operator's share of hay, which is comparable with line 15, column 12, of Form 1 (see Exhibit A).

Column 4. — Corn equivalent per unit is the amount of corn fed per livestock unit. If other grains are fed, these are referred to as corn equivalents.

Column 5. — To obtain the corn equivalent total, multiply column 1 by column 4. Total corn, line 13, is also for total livestock numbers. Operator's share of corn fed on a 50-50 lease is half of this amount.

Column 6. — Labor (hours) per unit refers to the hours spent in caring for the livestock, plus harvesting, storing, and handling the roughage fed to livestock.

EXHIBIT B

FORM 2. — LIVESTOCK SYSTEM

Livestock enterprise	Unit	Number of units	Hay equivalent		Corn equivalent		Labor (hours)		Capital[b]		Income over direct costs		
			Per unit[a]	Total (1x2)	Per unit[a]	Total (1x4)	Per unit[a]	Total (1x6)	Per unit[a]	Total (1x8)	Per unit[a]	Total (1x10)	Operator's share
Column No.		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1. Dairy cow, 10,000 lb., Grade A market	1 cow		7.2 T.	T.	60 bu.	bu.	100		$400	$	$250	$	$
2.													
3. Beef-cow herd, calf sold	1 cow		5.2 T.	T.	6 bu.		15		260		60		
4.													
5. Yearling feeder steer, drylot, 500-lb. gain	1 head	250	1.3 T.	325 T.	55 bu.	13,750	10	2,500	180	45,000	30	7,500	3,750
6.													
7. Hogs	1 litter	100	.1 T.	10 T.	100 bu.	10,000	20	2,000	120	12,000	60	6000	3,000
8.													
9. Sheep flock	1 ewe		.8 T.	T.	2.5 bu.		5		25		13		
10.													
11. Laying flock	100 hens				90 bu.		70		140		110		
12.													
13. Total feed required				335 T.		23750 bu.							
14. Total hay equivalent available (Form 1, line 15, col. 12)				378 T.									
15. Hay equivalent excess or deficit (difference line 13 and 14)				+43 T.									
16. Total livestock labor required								4500 hr.					
17. Total capital required										$57000			
18. Total livestock income over direct costs												$13,500	$

[a] See Tables 5, 6, 7, and 8 of Manual for explanation and methods of determining these requirements and net income per unit.
[b] Investment in livestock, feed inventory, and miscellaneous expense.

Column 7. — Figure total labor hours by multiplying column 1 by column 6. The total on line 16 is the amount of labor required for all livestock for an owner-operated unit or a livestock-share lease, since the livestock-share-lease operator supplies all of the labor.

Column 8. — Capital per unit is the capital needed for each unit of livestock (see Table 8). This figure does not include buildings and equipment.

Column 9. — Total capital required is computed by multiplying column 1 by column 8. The total capital requirement, line 17, is for all livestock. If the livestock is owned jointly on a livestock-share lease, then the tenant's share would be his share of the total.

Column 10. — Income over direct costs per unit is the figure found in the block budgets in Tables 6a-6f. The source-of-income section indicates what is sold to obtain income. Marketing costs, if any, are deducted to get gross income per unit. Variable direct-cost items indicate the direct costs included in total direct costs. The difference between gross income per unit and total direct costs equals income over direct costs. Other possible cost items are considered in expanding the enterprise only if any of these resources listed must be purchased or obtained at some cost. The dollar figure used in column 10 is the "income over direct costs" appearing in the block budgets in Tables 6a-6f.

Column 11. — Total income over direct costs is calculated by multiplying column 1 by column 10. Line 18, total livestock income over direct costs, is the sum of all livestock incomes in column 11.

Column 12. — Operator's share of income over direct costs is the operator's share of total in column 11, if owner-operated-unit columns 11 and 12 are the same. If the operation is a 50-50 livestock-share lease, then column 12 is 50 percent of column 11.

If an enterprise included in the farm business is not listed on Form 2, write in the livestock enterprise and select the respective per-unit values from the sources listed below:

Column 2 — Hay equivalent from Table 7, total hay, silage, and pasture column.

Column 4 — Corn equivalent from Table 7, corn column.

Column 6 — Labor hours from Table 4.

Column 8 — Capital per unit from Table 8.

Column 10 — Income over direct costs per unit may be found in one of the block budgets in Tables 6a-6f. If a livestock enterprise is entirely different, select the block budget nearest to the livestock enterprise, make necessary changes in selling price per unit, and alter feed quantities as necessary, but use other variable direct costs as given in one of the blocks.

Exhibit C: Form 3.— Summary

Lines 1 through 9 are to be used in figuring labor requirements and labor available. Follow instructions in parentheses for transferring crop- and livestock-labor needs. Line 3 may be taken from Table 9, or 30 percent of the total of lines 1 and 2 may be used. If Table 9 is used, read the footnotes carefully to determine type of farm. The important figures in the labor summary are the months of labor required, line 5, and

EXHIBIT C

FORM 3. — SUMMARY

LABOR AND CAPITAL REQUIREMENTS

1. Hours of direct labor on crops (Form 1, line 15, col. 3)	1216
2. Hours of direct labor on livestock (Form 2, line 16, col. 7)	4500
3. Hours of general farm overhead labor (Table 9, Manual, or 30 percent of total of lines 1 and 2)	1150
4. Total hours of direct and overhead labor	6911
5. Months of labor required (line 4 ÷ 220)	31.4
6. Months of operator labor	12
7. Months of family labor	4
8. Months of hired labor	12
9. Total months of labor available (lines 6, 7, and 8)	28
10. Value of land and buildings owned	
11. Cost of added land and buildings needed	
12. Total fixed capital investment	
13. Livestock, feed, and miscellaneous (Form 2, line 17, col. 9) ½ × $57000	28,500
14. Power, machinery, and livestock equipment owned (actual or Table 10, Manual)	21,300
15. Cost of added machinery and equipment needed	
16. Total operating capital investment (lines 13, 14, and 15)	49,800

INCOME OVER COSTS

17. Cash-crop income over direct costs (Form 1, line 19)	12,065
18. Livestock income over direct costs (Form 2, line 18)	6,750
19. Total income over direct costs	18,815
20. Cost of hired labor (line 8, ____ months × $____ per month)	4,800
21. Real estate taxes (actual or 1.5 percent of line 12)	
22. Repairs, depreciation, and insurance on buildings (actual or Table 11, Manual)	
23. Miscellaneous expenses (actual or Table 12, Manual)	940
24. Cash rent	
25. Total undistributed costs (lines 20 through 24)	5,740
26. Net income to unpaid operator and family labor, management, and capital (line 19 minus line 25)	13,075
27. Interest on total capital: 4 percent of line 12	
5 percent of line 16	2,490
Total interest	2,490
28. Net income to operator and family labor and management (line 26 minus line 27)	10,585

total months of labor available, line 9. These figures give some indication of the labor efficiency of a farm operation. Line 5 is also important for comparing the labor requirements of the different farm plans that may be budgeted.

Capital requirements are summarized on lines 10 through 16. Line 10 includes the value of land and buildings owned by the operator; full tenant-operators will make no entry on line 10. Line 11 is used when added land and buildings are considered in alternative budgets. The entry for line 13, livestock, feed, and miscellaneous, is taken from Form 2, line 17, column 9. If the operation is a livestock-share lease, the figure from Form 2 must be divided and only the operator's share entered on line 13. The entry for line 14 may be taken from the farm account record or from Table 10. Line 15 is used when alternative budgets include additional machinery and equipment. The totals on lines 12 and 16 are most important when comparing alternative plans to determine the varying needs for capital.

Income over costs, lines 17 through 28, is the summary of the income possibilities budget. Figures for lines 17 and 18 are taken from Forms 1 and 2. Line 19 is the total of cash-crop income and livestock income over direct costs. Lines 20 through 24 include undistributed costs and may be taken from previous farm records, if available. If figures are taken from the manual, carefully read all footnotes of the respective tables. Line 26, net income to unpaid operator and family labor, management, and capital, is comparable to long-time averages of net farm income or farm and family earnings used in Illinois record-book systems. When alternative plans are prepared and additional equipment and buildings are budgeted, the undistributed costs may need to be altered. Line 28, net income to operator and family labor and management, is important in considering the effects of added capital in alternative plans.

The income-possibilities forms separate crop programs from livestock programs and consider each enterprise in the business. By using these forms, you can use the present farm plan as a benchmark to compare alternative plans. It is much cheaper and faster to make comparisons on paper in developing a plan than to use the total farm business in trying out different plans.

ANNUAL FARM PROJECTIONS

The procedures for preparing annual budgets are explained at length so that the farmer can prepare a detailed analysis of projected receipts and expenditures and arrive at a complete financial analysis.

The purpose of the crop and livestock projections (Exhibits D, E, F, and G) is to determine as accurately as possible for the coming year the receipts and expenses by major categories. They provide the data necessary to prepare an accurate projected cash flow schedule and profit and loss statement.

Exhibit D: Crop Production and Crop Costs

1. List the crops to be grown in each field, the field number, the acres, and the estimated yield. Calculate total production by multiplying the acres by the estimated yield.

2. In the fertilizer section, list the analysis, the rate per acre, and the total required weight.

3. In the seed section, list the varieties and the total quantity of each kind and variety of seed.

4. In the chemicals section, list the kind or trade name, the rate of application per acre, and the total needed quantity.

5. In the summary part, list fertilizer, seed, chemicals, power, and machinery in the appropriate sections. State the analysis, variety, or kind, the amount needed, the month when needed, and the cost. If costs are shared by landlord, indicate the operator's share (see Exhibit D cost column with superscript "½"), and include only the operator's share of the cost in the cash flow budget (Exhibit I).

Exhibit E: Crop Usage and Feed Requirements

1. On the odd lines, list beginning inventory quantity and value of crops produced in the previous year.

2. On the even lines, list all crops to be seeded or harvested and the production in the current year.

3. If purchases of crops are necessary for feed, enter the quantity, the total cost or value, and the month needed in the respective columns. On the odd lines, enter purchases of old crop, and on the even lines enter purchases of the new crop. If the amount of feed needed from the old crop exceeds the quantity in the beginning inventory, then old corn must be purchased. In Exhibit E, 17,979 bushels of old corn were required for feed but only 17,250 bushels were on inventory at the beginning of the year, so 730 bushels were purchased to feed the livestock until the new corn crop was harvested. (Before the crop usage table can be completed, the feed requirements for livestock and the livestock budget sheet (Exhibit G) must be completed.)

4. Total available quantity is the sum of beginning inventory or production and purchases.

EXHIBIT D

BUDGET SHEET--CROP PRODUCTION AND CROP COSTS

Crop to Be Grown	Field No.	Field Acres	Yield	Total Production	Fertilizer Analysis	Fertilizer Rate/ Acre	Fertilizer Total	Seed Variety	Seed Quantity	Chemicals Kind	Chemicals Rate/ Acre	Chemicals Total
CORN		237	130	30,810 bu.	7-28-14	100	23,700	L×71	23 bu.	237A HEPTACHLOR	5#	1,185
					6-24-24	150	35,550	M2338	32 bu.	120A ATRAZINE	3¾#	450
					82-0-0	150	35,550					
WHEAT		15	50	750 bu.	16-48-0	100	1,500	OTTAWA	30 bu.			
					82-0-0	50	750					
OATS		60	70	4,200 bu.				CLINT 64	120 bu.			
HAY		50	4	200 T.								
		41										
SEEDING ALF-GRASS		75						BUFFALO 750# BROMEGRASS 300#				

Summary--Fertilizer and Other Crop Costs

Fertilizer Analysis	Fertilizer Requirement	Fertilizer When Needed	Fertilizer Cost	Seed Requirement	Seed When Needed	Seed Cost	Chemicals Requirement	Chemicals When Needed	Chemicals Cost	Power and Machinery Requirement	Power and Machinery Cost
7-28-14	12 T.	MAY	½ $1,044	23 bu. L71	MAY	½ $575	1185# HEPTACHLOR	MAY	½ $1,481	FUEL	½ $1,500
6-24-24	18 T.	NOV.	½ 1,620	32 bu. M2338	MAY	½ 416	450 # ATRAZINE	APRIL	½ 1,125	MACH. HIRE	½ 1,000
82-0-0	18 T.	JUNE	½ 2,160								
16-48-0	¾ T.	OCT.	½ 83	30 bu. OTTAWA	SEPT.	½ 90					
82-0-0	½ T.	APR.	½ 60								
				120 bu. CLINT 64	FEB.	—					
				760 # ALFALFA	MAR.	½ 450					
				300 # BROME	MAR.	½ 75					
		Total	½ $4,967		Total	½ $1,606		Total	½ $2,606	Total	½ $2,500

½ INDICATES THE SHARE TRANSFERRED TO THE CASH FLOW SHEET.

EXHIBIT E

BUDGET SHEET--CROP USAGE and FEED REQUIREMENTS

	CROP	Beg. Inventory Quantity	Beg. Inventory Value	Production	PURCHASES Quantity	PURCHASES Value	PURCHASES Mo.	Total Available Quantity	Farm Use Feed	Farm Use Seed	SALES Quantity	SALES Value	SALES Mo.	End Inventory Quantity	End Inventory Value
1966	CORN	17,250 bu.	$ 18,975		730 bu.	1/2 $ 825	3	17,980 bu.	17,980 bu.						
1967	CORN			30,810 bu.				30,810 bu.	5,575 bu.		6,235 bu.	1/2 $ 5,860	11	19,000 bu.	$ 20,900
1967	WHEAT			750 bu.				750 bu.			750 bu.	1/2 1,080	7	—	—
1966	OATS	3,748 bu.	2,250					3,748 bu.		120 bu.	3,628 bu.	1/2 2,470	3		
1967	OATS			4,200 bu.				4,200 bu.	—	—	3,000 bu.	1/2 2,040	11	1,200 bu.	720
1966	HAY	126 T.	2,325					120 T.	98 T.						
1967	HAY			200 T.				200 T.	68 T.					154 T.	3,080
1966	CORN SILAGE	172 T.	1,376					172 T.	172 T.						
														—	—
		(1/2) 24,926												(1/2) 24,700	

Livestock Kind	Livestock No.	Period on Feed	Corn Bu. Old	Corn Bu. New	Oats Old	Oats New	Supp. Tons	Hay, Tons Old	Hay, Tons New	Silage, Tons Old	Silage, Tons New
FEEDER CATTLE 850-1050	108	JAN.-MAR.	2,376				5.4 C	43			
FEEDER CATTLE 660-1050	150	JAN-JULY	6,000				12.0 C	55		172	
FEEDER CATTLE 450-750	100	JULY-DEC.	1,300	1,400			6.0 C		45		
FEEDER CATTLE 450-550	150	NOV.-DEC.		1,350			3.0 C		23		
BROOD SOWS	50	2 mo.	280				.61 H				
	50	12 mo.	1,275	425			7.75 H				
WEAN TO 220# PIGS	210	WEAN-AUG.	2,428				11.55 H				
	165	WEAN-NOV.	1,150	760			9.08 H				
WEAN-160# TO WEAN 140-220	210	3 MO.		1,640			7.87 H				
	165	—	—	—			—				
	170	JAN.-MAR.	850				4.08 H				
MARKET HOGS 35-220	200	JAN-MAY	2,320				11.0 H				
TOTAL			17,979	5,575			1/2 26.4 TO CATTLE 1/2 51.94 TO HOGS	98	68	172	

5. Farm use includes feed and seed. Feed entries are obtained from totals of livestock requirements at bottom of the form (see Exhibit E). Seed entries are taken from summary of crop production and crop costs (see Exhibit D).

6. Sales of crops include the quantity, the total value, and the month of sale.

7. The end of year inventory is calculated by subtracting the farm use and sales from the total quantity available.

Feed requirements for livestock are computed in the bottom part of Exhibit E. The livestock budget sheet (Exhibit G) must be completed to obtain livestock numbers and feeding period.

1. In the livestock columns, include the kind of livestock and the number. Include the beginning and ending weight of each group of livestock to facilitate estimating amount of feed consumed and length of feeding period.

2. The period-on-feed column includes the months livestock will be on feed.

3. List farm-grown feeds according to whether they are old or new crop. If previous farm records do not provide feed requirements, refer to Table 7 for guides in estimating amount to be fed.

4. List separate totals for supplement fed to different types of livestock. Carry the total value of supplement fed to the cash flow summary.

5. An alternate feed-requirement budget may be used if the livestock plan remains relatively the same from year to year (see Exhibit F). Enter the numbers of livestock as a group, and use feed requirements from Table 7 or the corn equivalents and protein and mineral from budgets in Tables 6a-6f.

Exhibit G: Livestock Budget

1. Enter the kind of livestock for each different group of animals in the "kind" column. If you farrow

EXHIBIT F

BUDGET SHEET--CROP USAGE and FEED REQUIREMENTS

	CROP	Beg. Inventory Quantity	Beg. Inventory Value	Production	PURCHASES Quantity	PURCHASES Value	PURCHASES Mo.	Total Available Quantity	Farm Use Feed	Farm Use Seed	SALES Quantity	SALES Value	SALES Mo.	End Inventory Quantity	End Inventory Value
1966	CORN	17,250 bu.	$ 18,975		730 bu.	1/2 $ 825	3	17,980 bu.	17,980 bu.						
1967	CORN			30,810 bu.				30,810 bu.	5,538 bu.		6,235 bu.	1/2 $ 5,860	11	19,000 bu.	$ 20,900
1967	WHEAT			750 bu.				750 bu.			750 bu.	1/2 1,080	7	—	—
1966	OATS	3,748 bu.	2,250					3,748 bu.		120 bu.	3,628 bu.	1/2 2,470	3		
1967	OATS			4,200 bu.				4,200 bu.	—	—	3,000 bu.	1/2 2,040	11	1,200 bu.	720
1966	HAY	126 T.	2,325					120 T.	98 T.						
1967	HAY			200 T.				200 T.	68 T.					154 T.	3080
1966	CORN SILAGE	172 T.	1,376					172 T.	172 T.						
														—	—
		(1/2) 24,926												(1/2) 24,700	

Livestock Kind	Livestock No.	Period on Feed	Corn Bu. Old	Corn Bu. New	Oats Old	Oats New		Supp. Tons	Hay, Tons Old	Hay, Tons New	Silage, Tons Old	Silage, Tons New
460-1050 FEEDER CATTLE	250	ANNUAL	9,375	3,125				30	106	56	172	
LITTERS of Pigs	100	ANNUAL	7,500	2,500				42.5				
TOTAL			16,875	5,625				30 T. 42.5 T.	106	56	172	

more than twice a year, group the brood sows and their pigs similarly to the example in Exhibit G.

2. Enter the number and value in each livestock group on beginning inventory.

3. Capital purchases include purchases of breeding livestock during the budget year. The entry should include the number, total cost, and month of purchase. If breeding stock is grown on the farm, make the transfer as indicated by the lines in Exhibit G. In transferring livestock grown on the farm to breeding stock, enter the number and month only.

4. Operating purchases include the number, the total cost, and the month of feeder livestock purchased during the budget year. Show sex of livestock if it is a price factor.

5. The number raised is the number of livestock produced by the breeding herd during the year.

6. Capital sales column includes the number, total value, and month of sale of breeding livestock sold.

7. The operating sales column includes the number, total value, and month of sale of all market livestock sold.

8. The ending inventory column includes the number and value of livestock that will be on hand at the end of the budget year.

9. An allowance should be made for death loss. From previous year's experience, the operator can estimate the loss in the manner shown at the right margin of Exhibit G.

10. The total number of livestock on each line to the left of the center double line (see Exhibit G) should equal the number to the right of the center double line if death losses are considered.

11. Total the beginning and ending inventory values by categories: (a) total market livestock and (b) total breeding livestock.

Exhibit H: Inventory — Repair — Replacement and Improvement Budget

This form is used to list purchases of new items or repair of items listed above the form. It provides space for listing items not provided for in the other forms.

EXHIBIT G

BUDGET SHEET--LIVESTOCK

Kind*	Beg. Inventory No.	Beg. Inventory Value	Capital Purchases No.	Capital Purchases Cost	Capital Purchases Mo.	Operating Purchases No.	Operating Purchases Cost	Operating Purchases Mo.	Raised No.	Capital Sales No.	Capital Sales Value	Capital Sales Mo.	Operating Sales No.	Operating Sales Value	Operating Sales Mo.	End Inventory No.	End Inventory Value	NO. DIED
Feeder Cattle 850#	108	23,800											108	1/2 28,630	3		—	
Feeder Cattle 450#	—	—				100	1/2 12,040	7								98	$ 18,375	2
Feeder Cattle 660#	150	24,750											150	1/2 38,980	7		—	
Feeder Cattle 450#						150	1/2 17,685	10								149	20,490	1
Boars	3	245**	1	1/2 125	7					1	55	5				3	275**	
Brood Sows	28	1,400**	28	—	3					28	1,680	5				28	1,680**	
Feb. Pigs									210				204	1/2 8,120	8		—	6
Aug. Pigs									210							205	5,740	5
Brood Sows	22	1,100**	22	—	5					22	1,320	7				22	1,320**	
May Pigs									165				160	1/2 5,490	11		—	5
Nov. Pigs									165							164	1,970	1
Market Hogs	170	4,250								28	—	3	142	1/2 5,620	3			
	200	2,000								22	—	5	172	1/2 6,620	5			6
Total Market Livestock		1/2 54,800															1/2 46,575	
Total Breeding Livestock		1/2 2,745**															1/2 3,275**	

* Use two lines for each group of animals.

** Breeding Livestock

Exhibit I: Farm and Family Financial Budget

The farm and family financial budget, commonly referred to as the cash flow sheet, includes operating sales, capital sales, operating expenses, capital expenditures, family living expenditures, money borrowed, and repayments of borrowed money. These figures are summarized by months to project the flow of cash for the farm and family. A cash flow sheet will help a farmer estimate the amounts and timing of his credit needs, as well as the availability of repayment funds. Farmers with adequate capital of their own can make profitable use of a financial budget to plan a more adequate investment program.

1. Operating and capital sales (Exhibit I) entries are made by months and include only the operator's share of sales. Livestock and livestock product sales are taken from the livestock sheet (Exhibit G). Crop sales are taken from the crop usage section (Exhibit E). Other farm receipts are estimated from the previous year's farm records.

2. Operating and capital expenditure entries are also made by months and include only the operator's share of expenditures. Livestock purchases (lines 10 and 27) are taken from livestock purchases on the livestock budget (Exhibit G). Feed purchased (line 11) is obtained from the crop usage and feed requirement budget (Exhibit E) under crop purchases and supplement in tons valued at the current price. Gasoline, fuel, and oil (line 15) are estimated on the crop-cost budget (Exhibit D). Machine hire (line 16) is taken from the same source as gasoline, fuel, and oil. Fertilizer (line 19), seed (line 20), and crop supplies or chemicals (line 21) are all taken from the crop-cost budget (Exhibit D). Capital expenditures for machinery or buildings (lines 28 and 29) are estimated on the budget sheet (Exhibit H). All other farm expenses are estimated from the previous year's farm records.

3. Budget summary data come mainly from the sales and expenditures section of the cash flow sheet. The cash balance (line 31) entry is the cash estimated to

EXHIBIT H

BUDGET SHEET

INVENTORY-REPAIR-REPLACEMENT & IMPROVEMENT

Buildings	Custom work or machine hire	Sheep equipment
Drainage		Dairy equipment
Fences	Hog equipment	Supplies
Machinery	Beef equipment	

Repair	Replacement	Improvement	Description of Need	Number of Quantity Needed	When-- Mo. Yr.	Estimated Cost
	✓		TRACTOR, 5-14" PLOW 6 ROW CULTIVATOR & PLANTER		3/67	9000

be on hand at the beginning of the year. Total operating sales, line 32, are carried from line 6. Total capital sales, line 33, are transferred from line 9. Operating expenses, line 38, are carried from line 26. Capital expenditures, line 39, are transferred from line 30. Family living expenses, line 40, are taken from a home account record summary, or they may be estimated from the family living budget (lines 46-64 on the form, not reproduced here). Payments on previous year's obligations, line 41, are the payments on notes and mortgages that must be paid during the budget year. Interest payments, line 43, are interest payments for the items on lines 41 and 42. All of the entries on the budget summary mentioned in this paragraph should be made before the summary is completed.

4. The completed budget summary (Exhibit J) is based on data as they would appear in Exhibit I. A minimum balance should be maintained each month to cover part of the cash expenses and family living if there is a delay in expected income for a particular

EXHIBIT I

1967

FARM AND FAMILY FINANCIAL BUDGET

	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Operating sales													
1. Livestock	46,730			17,125		3,310		19,490		4,060		2,745	
2. Livestock products													
3. Crops	5,725			1,235				540				3,950	
4. Custom work													
5. Government payments and miscellaneous	690	95	160				80		150		115	90	
6. TOTAL OPERATING SALES	53,145	95	160	18,360		3,310	80	20,030	150	4,060	115	6,785	
Capital sales													
7. Livestock (dairy, breeding)	1,527					867		660					
8. Machinery and equipment													
9. TOTAL CAPITAL SALES	1,527					867		660					
Operating expenses													
10. Feeder livestock purchases	14,863							6020			8,843		
11. Feed purchased CORN 415 SUPP. 4,320	4,735	360	360	775	360	360	360	360	360	360	360	360	360
12. Livestock expense (breeding, veterinary, medicine)	720		95	115		65	85	90		85	40	60	85
13. Hired labor	4,800	360	360	360	420	500	360	360	360	360	500	500	360
14. Repairs — machinery	2,400	50	50	100	100	500	300	100	250	150	300	150	350
15. Gasoline, fuel, oil	1,500	150		150	250	250	150		150	150	100	150	
16. Machine hire	1,000	40	40	30	40	60	60	140	50	60	50	180	250
17. Auto (farm share)	240	20	20	20	20	20	20	20	20	20	20	20	20
18. Electricity and telephone	480	40	40	40	40	40	40	40	40	40	40	40	40
19. Fertilizer and lime	2,484				552	1,080					42	810	
20. Seed and plants purchased	804			263		496				45			
21. Crop supplies (sprays, etc.)	1,303				562	741							
22. Repairs — buildings, tile, fence, etc.													
23. Taxes (real estate, machinery, etc.), rent	260					260							
24. Insurance (fire, windstorm, liability, etc.)	480			170						310			
25. Miscellaneous	240	80		20		20		30		30		30	30
26. TOTAL OPERATING EXPENSES	36,309	1,100	965	2,043	2,344	4,392	1,375	7,160	1,230	1,610	10,295	2,300	1,495
Capital expenditures													
27. Livestock	63							63					
28. Machinery TRACTOR, 5 PL., 6 R. CULT., 6 R. PLANTER	9,000			9,000									
29. Buildings, fence, tile, etc.													
30. TOTAL CAPITAL EXPENDITURES	9,063			9,000				63					

(Continued on page 14)

month. In the example, a minimum of $1,000 is maintained.

Preliminary totals of available dollars (lines 31 + 32 + 33 + 34 + 35 = line 37) and expenditures (lines 38 + 39 + 40 + 41 + 43 = line 44) are computed for January. The difference between line 37 and line 44 is the cash balance at end of month (line 45). Carry total on line 45 for January to line 31 for February. In February, the total available dollars (lines 31 + 32 + 33 + 34 + 35) are less than total expenditures (lines 38 + 39 + 40 + 41 + 43), so $4,500 is borrowed, entered on line 36, and added to the previous total. The new total of available dollars, $7,605, less total expenditures, leaves a cash balance of $1,220. In March, the

EXHIBIT I (cont.)

Budget summary	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
31. Cash balance (beginning of month)	4,400	4,400											
32. Total operating sales (6)	53,145	95	160	18,360		3,310	80	20,030	150	4,060	115	6,785	
33. Total capital sales (9)	1,527					867		660					
34. Nonfarm wages													
35. Other income													
36. Money borrowed this year													
37. TOTAL AVAILABLE DOLLARS													
38. Operating expense (26)	36,309	1,100	965	2,043	2,344	4,392	1,375	7,160	1,230	1,610	10,295	2,300	1,495
39. Capital expenditures (30)	9,063			9,000				63					
40. Family living and nonfarm business expenditures (64) FAMILY LIVING / INCOME TAX & PER. PROP. TAX	5,400 / 5,030	450	450 / 4,970	450	460	450 / 60	450	450	450	450	450	450	450
41. Payments on previous year's obligations 2,700 MARCH. LOAN 3,000 ON NOTE	4,700							2,000			2,700		
42. Payments on current year's borrowed money													
43. Interest payments on 41 and 42	1,082							600			482		
44. TOTAL EXPENDITURES													
45. CASH BALANCE (end of month)													
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.

EXHIBIT J

Budget summary	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
31. Cash balance (beginning of month)	4,400	4,400	2,945	1,220	5,012	2,278	1,553	1,208	8,680	7,150	9,150	1,238	3,363
32. Total operating sales (6)	53,145	95	160	18,360		3,310	80	20,030	150	4,060	115	6,785	
33. Total capital sales (9)	1,527					867		660					
34. Nonfarm wages													
35. Other income													
36. Money borrowed this year	11,800		4,500				1,400				5,900		
		4,495	7,605	19,580	5,012	6,455	3,033	21,898	8,830	11,210	15,165	8,023	3,363
37. TOTAL AVAILABLE DOLLARS	70,872												
38. Operating expense (26)	36,309	1,100	965	2,043	2,344	4,392	1,375	7,160	1,230	1,610	10,295	2,300	1,495
39. Capital expenditures (30) 9000 FARM MACHINERY 63 LOAN	9,063			9,000				63					
40. Family living and nonfarm business expenditures (64)	5,400 / 5,030	450	450 / 4,970	450	460	450 / 60	450	450	450	450	450	450	450
41. Payments on previous year's obligations $2,000 ON NOTE 2,700 MARCH LOAN	4,700							2,000			2,700		
42. Payments on current year's borrowed money	7,800			3,000				2,900				1,900	
43. Interest payments on 41 and 42	1,082 / 70			15				600 / 45			482	10	
		1,650	6,385	14,508	2,764	4,902	1,825	13,218	1,680	2,060	13,927	4,660	1,945
44. TOTAL EXPENDITURES	69,454												
45. CASH BALANCE (end of month)	1,418	2,945	1,220	5,012	2,278	1,553	1,208	8,680	7,150	9,150	1,238	3,363	1,418
THIS YEAR'S BORROWED MONEY OUTSTANDING (36 & 42)		Jan. 0	Feb. 4,500	Mar. 1,500	Apr. 1,500	May 1,500	June 2,900	July 0	Aug. 0	Sept. 0	Oct. 5,900	Nov. 4,000	Dec. 4,000

total available dollars greatly exceed the total expenditures, so a $3,000 payment is made on money borrowed in March. Interest is also paid on the $3,000 payment. The principal payment and the interest payment respectively are entered on lines 42 and 43. Continue these procedures for each month during the year.

5. The final step is to summarize the borrowed money outstanding. Make this summary at the bottom of the form, as written at the bottom of Exhibit J. Accumulate the amounts borrowed by months by adding lines 36 and subtracting lines 42. These accumulated totals indicate the amount of borrowed money outstanding at the end of each month.

Exhibit K: Budget Summary Profit and Loss

The profit and loss statement is a summary of the farm business for the budget year. The information comes from the cash flow, the farm record depreciation schedules, the crop usage budget, and the livestock budget. The sources are noted on the budget summary (Exhibit K). Note that cash expenses include operating expenses, line 38, and interest payments, line 43, from Exhibit I.

The profit and loss statement provides an estimate of the expected farm income for the budget year, whereas the cash flow budget summarizes the flow of funds each month during the year.

EXHIBIT K

BUDGET SUMMARY PROFIT AND LOSS

Total operating sales (LINE 32)			$ 53,145
Operating expenses			
Cash expenses (LINE 38 & 43)		$ 37,461	
Depreciation (FARM ACCOUNT RECORD, DEPR. SCHEDULE)		4,316	
Total operating expenses			$ 41,777
Operating profit and loss			$ 11,368
Capital gains and losses			
	Livestock	Machinery and equipment	
Gross sales (LINE 33)	$ 1,527	$	
Remaining cost (dep. sch.)	38		
Total capital gain or loss ±	1,489	±	$ 1,489
Net operating and capital gains profit and loss			12,857
	Feed and grain	Market livestock	
Net inventory change			
Ending inventory (EXHIBIT E)	12,350	23,287	
Beginning inventory (EXHIBIT G)	12,463	27,400	
Net change ±	-113	± -4,113	-4,226
Net profit or loss			$ 8,631

OPERATOR'S CONTINUOUS NET WORTH STATEMENT

Exhibit L: Net Worth Statement

The continuous net worth statement lists the values of current assets, fixed assets, current liabilities, and deferred liabilities at the end of each year. The difference between total assets and total liabilities is the net worth or total net savings in all forms of assets. The net worth statement should reflect the actual conservative sale values of the assets. These assets should also reflect the amount of depreciation on depreciable items.

The combined use of the net worth statement and the profit and loss statement is the only way a farmer can really determine the success of his farm business. The profit and loss statement indicates how much profit he makes each year, while the net worth statement indicates how well he uses his profit for capital accumulation.

EXHIBIT L

OPERATOR'S CONTINUOUS NET WORTH STATEMENT

ASSETS	Dec. 31, 1966		Dec. 31, 19__		LIABILITIES	Dec. 31, 1966		Dec. 31, 19__	
1. Cash on hand and in banks	4,400				25. Notes payable	10,000			
2. Accounts receivable					26. Accounts payable				
3. Securities, stocks, and bonds					27.				
4. Cash value of life insurance	1,560				28. Liens or chattel mortgages on:				
5.					29. Livestock				
6. Feed, grain, and seeds	12,463				30. Machinery	8,100			
7. Hogs	4,498				31. Automobile				
8. Cattle	24,225				32. Crops				
9. Poultry					33. House furnishings and equipment				
10. Sheep					34.				
11. Horses					35. Loans on life insurance				
12. Other current assets					36. Other current liabilities				
13.					37.				
14. Total current assets		42,196			38. Total current liabilities		18,100		
15. Machinery and equipment	18,742				39. Mortgages on farm land				
16. Automobile	1,325				40.				
17. House furnishings and equipment	3,400				41. Mortgages on other real estate				
18.					42. Other debts				
19. Farm land with improvements					43.				
20. acres @ $ per acre					44. Total deferred liabilities				
21. acres @ $ per acre					45. Total liabilities (line 38 + line 44)		18,100		
22. Other real estate					46. NET WORTH (line 24 — 45)		52,613		
23. Total fixed assets		23,517							
24. Total assets (line 14 + line 23)		70,713							

PARTIAL BUDGETS

Partial budgets can be a very helpful tool in farm planning. They are commonly used to estimate the effects of possible adjustments in the farm business before adjustments are made. A little pencil work can save many dollars in preventing a wrong decision. Some examples of such adjustments are (1) purchasing a new machine, (2) leasing a machine, (3) constructing a new building, (4) reducing the number of acres of one crop and increasing acres of another crop, (5) adding more brood sows or feeder pigs, (6)

adding to the size of a dairy herd, and (7) increasing or decreasing the number of feeder cattle.

In making partial budgets, be sure to keep these points in mind.

1. Include *every* item of cost that will be affected by the change.
2. Include *every* item of returns that will be affected.
3. Use *reasonable* and *realistic* yields and prices.
4. Usually you will want to consider more than one alternative.

Exhibit M: Partial Budget

Exhibit M illustrates use of a partial budget to help determine whether to buy a self-propelled combine with a corn head or to use a custom operator. Another alternative might be to lease the necessary machinery.

Note the fixed costs: (1) depreciation, (2) interest, (3) taxes, (4) insurance, and (5) housing. All of these are annual costs. They must be met whether or not the machine is used. Calculate depreciation by dividing the cost of the machine by the number of years you expect to use it.

To calculate interest, multiply the purchase price by the annual interest rate you are currently paying for borrowed capital for machinery purchase, and divide by two, or multiply the purchase price by one-half of your annual interest rate.

Example:

Cost of the machine is $10,000;

$10,000 \times 6\% = \$600 \div 2 = \$300$, average annual interest cost

or

$10,000 \times 3\% = \$300$, average annual interest cost.

On the basis of your past tax records plus anticipated increases in tax rates, estimate how much the proposed adjustment will increase your property taxes.

On the basis of your present insurance rates, estimate how much it will increase your present annual insurance premium.

A charge for shelter should probably be made whether or not the machine is housed. Annual storage costs on a typical inventory of machinery and equipment will be about 1.2 percent of the purchase price.

Next consider variable costs. In the case of a machine, these costs include repairs, fuel, oil, grease, and labor.

Repair costs can be estimated from past records on farm machinery if they are available. If not, they may vary from 2 percent to 7 percent of the price annually. An average figure would be 4 percent.

Fuel, oil, and grease costs should also be based on estimates obtained from past records. If they are not available, use a figure of about 46 cents per acre for a two-row corn combine.

No reduced income is included in a proposed adjustment of this kind.

After listing additional costs and reduced returns — when applicable — consider possible additional returns. In an example such as is used in Exhibit M, owning a combine might make possible a more timely harvest, because of not having to wait for a custom operator, and hence additional returns. Another example would be the sale of livestock produced or finished as a result of starting a livestock enterprise or enlarging the present one.

Next list reduced costs. In the example the reduction would be in hiring a custom operator. If you owned your own machine, you would not have to hire one.

Now total all dollars listed under additional costs and reduced returns. Then total the additional returns and the reduced costs. If the total additional returns and reduced costs are greater than the total additional costs and reduced returns, assuming that the figures used were reasonable and realistic and that the operator can assume the increased risks if any, the proposed adjustment may be made.

In Exhibit N, note that the proposed adjustment involves adding 51 steers to an existing feeding operation. In this illustration the operator has decided to change his cropping system by not producing 20 acres of soybeans and 20 acres of wheat. Instead he is increasing his alfalfa acreage by 20 acres, of which he will use 10 acres for pasture, and he is raising 20 acres of oats.

Note carefully the additional costs and reduced returns compared with the additional returns and reduced costs.

Assuming that the figures are reasonable and realistic, the addition of 51 calves would increase his income by $246. However, with the increased risk that would be involved, it is doubtful that he should make the proposed change.

Preparing partial budgets often helps a farmer decide whether to make a particular adjustment.

(Exhibits M and N are shown on pages 18 and 19.)

EXHIBIT M

PARTIAL BUDGET

Adjustment: Changing from custom combining to ownership of a corn combine for 250 acres of corn.

Additional costs		$
Annual fixed costs		
Interest		
$\frac{\text{Purchase price + salvage value}}{2}$	x interest rate	330
Depreciation		
$\frac{\text{Purchase price - salvage value}}{\text{yrs. of life}}$		900
Taxes		
$\frac{\text{Purchase price}}{2}$	x 2%	100
Insurance		
$\frac{\text{Purchase price}}{2}$	x .5%	25
Shelter		
Purchase price	x 1%	100
Operating costs		
Fuel		175
Oil		18
Labor		
$\frac{250 \text{ acres}}{1.57 \text{ acres/hr.}}$	x $1.50/hr.	239
Repairs		
4%/yr.		400
Reduced returns		$
A. Total annual additional costs and reduced returns		$2,287

Additional returns	$
Reduced field losses ??	
Reduced costs	$
Custom combining	
$7.00/acre x 250 acres	1,750
B. Total annual additional returns and reduced costs	$ 1,750
	$ 2,287
Net change in income (B minus A) (-)	$ 537

EXHIBIT N

PARTIAL BUDGET

Adjustment: Feeder Steers:

Purchase: 450 pounds each at $27.00 per cwt. plus a 2 percent death loss (one animal).
Sale: 1,000 pounds each at $24.50 per cwt. gross; marketing charge of $6.00 per head.
Feed: 50 bushels of corn equivalent and 220 pounds of supplement per head; pasture and hay from the additional 20 acres of alfalfa. Ten of the additional 20 acres will be harvested as hay.
Interest on cattle and concentrates: $10 per head.
Taxes and miscellaneous costs: $4 per head.

Additional costs		Additional returns	
51 steers purchased at 450 lb., $27 per cwt.	$ 6,196	50 steers sold at 1,000 lb., $24.50 per cwt	$12,250
50 steers, marketing cost, $6 each	300	20 acres oats, 60 bu. per acre, 55¢ per bu.	660
11,000 lb. supplement (220 x 50), $5 per cwt.	550		$12,910
Taxes and miscellaneous costs, $4 per head (50 steers)	200		
Interest, $10 per head (51 steers)	510		
20 acres oats, $10 per acre	200		
Fertility for oats, 1,200 bu., 12¢ per bu.	144		
Harvesting 10 acres additional hay, $13.50 per acre	135		
	$ 8,235		
Reduced returns		**Reduced costs**	
20 acres soybeans, 32 bu. per acre, $2.20 per bu.	$ 1,408	Growing and harvesting:	
20 acres wheat, 36 bu. per acre, $1.50 per bu.	1,080	20 acres soybeans, $15 per acre	$ 300
2,500 bu. corn (50 bu. per steer to 50 steers), $1.10 per bu.	2,750	20 acres wheat, $12 per acre	240
		Fertility:	
		640 bu. soybeans, 15¢ per bu.	96
		720 bu. wheat, 24¢ per bu.	173
			$ 809
A. Total annual additional costs and reduced returns	$13,473	B. Total annual additional returns and reduced costs	$13,719
			13,473
		Net change in income (B minus A) (+)	$ 246

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